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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/440,277	11/15/1999	XIN CHEN	006005-026	2753

7590 05/20/2003

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EXAMINER

MEDINA SANABRIA, MARIBEL

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 05/20/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/440,277

Applicant(s)

CHEN ET AL.

Examiner

Maribel Medina

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/08/03 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 5-6 and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,470,931 (Callahan et al).

Callahan et al disclose a process for the ammoxidation of hydrocarbons, with the elimination of ammonia breakthrough in a reactor effluent. The process comprises providing a fluidized bed reactor (1); the reactor comprising a catalyst bed (3); a dilute phase above the catalyst bed; and a set of internals disposed at least partially within the dilute phase of the catalyst bed (See the figure and col. 5, line 32 to col. 6, line7). Regards the limitation of claim 5, that reads, "an inlet of a first-stage cyclone separator disposed above the set of internals", Callahan et al discloses that "cyclones are used at the top of the reactor to separate the fluidized-

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bed catalyst from the products" (See col. 4, lines 16-18). Regarding claim 6, Callahan et al disclose in column 2, lines 28-29, the use of horizontal grids or screens, and disclose in column 3, lines 14-16, the use of sieve trays. Regards claim 9, Callahan et al exemplifies his invention with ammoxidation of propylene. No difference is seen between the instant claimed invention and Callahan et al disclosure.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,470,931 (Callahan et al).

Callahan et al apply herein as above. Callahan et al fail to disclose, "a bottom side of the set of internals is at a depth within the catalyst depth of not greater than 20 % of the total height of the catalyst bed". The quantity of a catalyst in a fluidized bed is dependent on a number of reactions conditions, such as the reactants, desired product, desired conversion rate, flow rate, temperature, etc. Therefore, the relationship of the fluidized bed height to the position of the internals is a result effective parameter. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have determined by experimentation the relationship of these parameters, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Response to Arguments

6. Applicant's arguments filed on 3/25/03 have been fully considered but they are not persuasive.

In regards to claims 5-6 and 8-9 for the rejection under 35 USC 102(b)

Applicants argue:

- a. "The instant claimed invention has the feature of "internals introduced into space above the catalyst bed layer" but Callahan et al. does not "

This argument is not convincing, since Callahan et al clearly discloses as seen in the Figure internals, screen (5), introduced into space above the catalyst bed layer (3).

- b. "The instant claimed invention does not use a fixed-bed catalyst, but Callahan et al. does use it."

This argument is not convincing since the instant claims does not exclude the use of a fixed catalyst bed layer as Callahan et al disclose. Alternatively, the instant claims 5 and 9 recite the following limitations "(1) a catalyst bed... (2) a dilute phase of the catalyst bed disposed above the catalyst bed" This limitations have been interpreted as being a **(1) a fixed catalyst bed and (2) fluidized catalyst bed**, therefore no difference is seen between the instant claims and Callahan et al disclosure.

In regards to the rejection for claim 7 under 35 USC 103(a)

Applicants argue:

- a. "The internals disclosed by Callahan et al doe not achieve the same function of the instantly claimed set of internals"

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This argument is not convincing since the internals disclosed by Callahan et al clearly achieve the same function of the instantly claimed set of internals as seen in col. 6, lines 5-7, wherein ammonia breakthrough is eliminated. Alternatively, the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

- b. "The primary feature of Callahan et al is that it teaches combination fixed-fluid bed catalysts, while the instant invention achieves the same effects without the use of fixed bed catalysts"

This argument is not convincing since the instant claims does not exclude the use of a fixed catalyst bed layer as Callahan et al disclose. Alternatively, the instant claims 5 and 9 recite the following limitations "(1) a catalyst bed... (2) a dilute phase of the catalyst bed disposed above the catalyst bed" This limitations have been interpreted as being a **(1) a fixed catalyst bed and (2) fluidized catalyst bed**, therefore no difference is seen between the instant claims and Callahan et al disclosure.

- c. "The amendment results in a structural difference"

This argument is not convincing, since Callahan et al clearly discloses as seen in the Figure internals, screen (5), introduced into space above the catalyst bed layer (3).

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Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to the examiner Maribel Medina. The examiner can normally be reached on Monday through Friday from 7:30 AM to 3:30 PM. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Examiner: Maribel Medina *MM*
Tel: 703-305-1928
Fax: 703-872-9310
May 12, 2003


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